PATENT

S/N 09/751,614

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Phil Geng et al.
Serial No.: 09/751,614
Filed: December 29, 2000
Title: VIA-IN-PAD WITH OFF-CENTER GEOMETRY

Examiner: Jose H. Alcala
Group Art Unit: 2827
Docket: 884.387US1

#8/C Amdt
J. McClellan 8/8/02

SUPPLEMENTAL AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

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Please amend the above-identified patent application as follows.

IN THE CLAIMS

Please add the following new claims 37-45. New claims 37-45 are also set forth below.

37. An electronic assembly comprising:

an integrated circuit package having a plurality of contacts and a centerline separating the plurality of contacts into two substantially equal portions; and

a substrate having a plurality of lands respectively aligned with the plurality of contacts, each land having a geometric center and an edge, each land having a via offset therein, each via having a geometric center located in a region between the geometric center and the edge of its associated land, wherein the lands comprise a first group having vias offset in a first direction and a second group having vias offset in a second direction, wherein the geometric centers of vias of the first group of lands are offset in a first direction and the geometric centers of vias of the second group of lands are offset in a second direction, and wherein the first and second groups are on opposite sides of the centerline.

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38. The electronic assembly recited in claim 37, wherein the contacts and the lands comprise a coating of solder and wherein, during a solder reflow operation, surface tension forces in molten solder residing between the respectively aligned contacts and lands are substantially equalized between the first and second groups of lands.

39. The electronic assembly recited in claim 38, wherein each via inhibits a thermally expansive substance residing therein from causing adjacent contacts of the integrated circuit package to be